EDUCATIONAL PROGRAMS AND MANPOWER*

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I LIVE in a medical school, and therefore my points of reference are the educational programs that supply manpower for the health field. There is a difference between the university whose function is to take green manpower and turn out trained manpower and the health service unit whose function is to give health services with the use of trained manpower. A manpower-converting unit is not the most efficient research unit or the most efficient service unit. A university does research and takes care of sick people in order to develop manpower. We do not do research as a primary interest. Our output is man. We do not give medical services as a primary interest. Our output again is man.

For the production of the manpower we do use both the tools of research and the tools of medical care and its implementation. May I point out that the educational field is of necessity inefficient. One can never educate anyone to think if at the same time one is requiring him to have maximal efficiency in the use of those things that he has already learned. Education is essentially putting bits of information into pupils' heads and then giving them the opportunity and the chance to build new structures, to make new things and, above all, to make mistakes.

So, an educational institution by its very nature is an inefficient institution. In the clinical training of manpower, it must remain in part inefficient in regard even to use of technical, secretarial, and other kinds of help—for the very real reason that it is not desirable to raise the basic cost of the unit in which the physician is getting his education to the point where it must produce the maximal amount of services. If this happens, it is not possible to carry out the education.

It is unfortunate that most of our physicians and nurses go into areas set up primarily for service, where their only experience has been a

*Presented in a panel, New Concepts in Planning for More Effective Use of Resources, Manpower, and Facilities: Allocation of Current Resources and Planning for Future Requirements, as part of the 1967 Health Conference of The New York Academy of Medicine, *Planning for Community Health Services: Perspectives for Action,* held at the Academy, April 20 and 21, 1967.

rather long one in manpower-converting units. When they start to function in what are primarily service roles, they begin, of course, to attempt to create in their service functions exactly what they had in the manpower-converting units. And many of the problems that relate to the organization of health care, particularly in community hospitals, relate to this frame of reference, which is really, I think, no longer a very good frame of reference when the giving of services is the primary goal.

I believe the time has come for the university system to begin to set up opportunities for an individual who has completed his training to work in an area that is concerned primarily with the effective use of trained manpower to give health care. This unit will be a user of trained manpower, not a producer of trained manpower. The university will need to agree to produce any type of manpower needed by the service area.

In order to do this, of course, one must have money, personnel, and ability. Duke University has given some consideration to this matter. I shall describe these things because I do not know any other way to be useful to you except to tell you what we are doing. We decided that we cannot produce manpower and illustrate the proper use of manpower for health services within the existing university unit. We simply cannot make the service unit a primary goal and function in the middle of a manpower-converting unit and have it make sense.

So we are going a distance away from the hospital and, under the direction of Dr. Harvey Estes, chairman of our Department of Community Health Services, we are setting up a new building complex. We are going to set up a new faculty and a new fiscal organization, with monies—whatever is accumulated for this venture—to feed back into the business. Except for raising the money, I think that the planning has gone pretty well. And it will be a few years before we know whether there is any wisdom in this approach to the matter.

I should like to say a word about the names in the health profession, which do get us into trouble. People look on a physician with an M.D. as a sort of uniform product, when actually M.D.'s are no longer interchangeable. Physicians have a very wide spectrum of activities, and therefore the determination of how many doctors there are in relation to population gives you no information about the number of persons available for any particular kind of work that physicians do.

We are in even worse trouble in regard to nurses. If one uses the word "nurse" the term gives a fairly uniform picture to the physician and to many of the consumers of health care. But, interestingly enough, this picture is quite different from the picture the word "nurse" conveys to the nursing educator. We should have to say, at least in our part of the world, that nursing education is becoming a general form of education. And I should have to say that we have a very attractive student body. Students are fun to talk to and to work with; they generally marry well and they live well. But they are no longer a very active force in the field of health. And, because of the amount of time that is devoted to general education in the course of the relatively short half-life of active work in the field, we no longer look upon a nurse primarily as a person allied with the physician who is going to give care in the field of health. We must begin to bring into the field of health persons more closely allied with it who will, on a career basis, stay with it longer.

So, as the whole world changes around us, we are even tripped up by the use of names. It is interesting, as a problem in communication and learning, to see nurse educators talk to a group of doctors and explain to them that their goal is a general education not closely related to activities in the hospital. Two or three weeks later, ask a group of doctors to give you the gist of what was said. The doctors never remember being told that the hospital is no longer the central point in nurses' training.

But I think the educator of the nurse has a point, and I think we had better pay attention to it. We are living in a time when new professionals are going to have to be brought into the health field if the physician is to find it possible to discharge his duties. Let me draw a parallel again with the nursing field. About 20 years ago it became obvious that there were not going to be enough nurses to fill the requirements of the field of health. But it was difficult to establish general appreciation of this eventuality, and it was difficult to initiate programs that would eventually take up the slack in the nursing field.

The problem seems highlighted to me by the fact that the nurse in our hospital is the only person who cannot learn. Anyone else in the hospital can be upgraded in his work because he has time to learn something new every year. But our nurses have reached the point where they are in such short supply and are so overcome by their responsibilities that they have no time for learning.

This is the same point that is beginning to confront the physician. If you watch the average physician in practice, you discover that he now has little time for learning. As we attempt to give medical care to the entire population, our current supply of physicians is not going to suffice. Unless we begin to add more workers to the health field, the physician will find himself within the next 10 to 15 years in exactly the situation in which the nurse is now. And for all I know, he may use the same solution—namely, withdraw as a major factor in the health field.

We do have a difference in point of view between those people who believe the past can be recreated and shored up by tinkering with it here or there, and those individuals who believe that a new era is beginning, that an old era is ended, and that not too much time should be spent in tinkering with or shoring up the past. It seems clear to me that one era is ended and that another has begun.

I should like to say a few words about the problem of putting doctors in relation to persons who in the past have not received medical care. I was certainly a slow learner in this area. It is easy for one to learn something in one field and find it difficult to relate it to other fields in which one is active.

For years we have been concerned with the problem of what to do with persons who have come from countries that have a much less well-developed society than we have and a much less developed educational system than we have. Frequently they come to this country for college, where they spend four years. They go through four years of medical school. Then they go through four or five years of professional training in this country. When they return home they find a society into which they cannot fit and find no niche in which they can be useful. Having made a large emotional commitment to one way of life, with 12 years of fairly hard work, they tend to be either unhappy where they are or they tend to return here.

We now wish to give modern medical care to a large section of our population who have received limited care in the past. We have the question of how do we get doctors to them. And it is becoming obvious to us that those bright Negro students who compete well in college, who get into Harvard Medical School, and who come to Duke University for four years of postgraduate training are not of any help to us in this problem. And we are dealing with exactly the same kind of situation that confronted us when we took other persons out of their culture or

changed their culture for 12 years and then wished them to return to it.

So we have begun the slow process of identifying persons who have never lost their contact with the culture in which we need help. Under the leadership of Dr. Charles D. Watts, a program has been established at Lincoln Hospital, Durham, N.C., to train graduates of Meharry Medical College and also of Howard University. These students use the facilities of Duke Medical Center to give training at Lincoln. Part of the time is spent at Duke Medical Center. On graduation from the training program, the doctors join the medical clinic of Lincoln Hospital and take care of both public and private patients. This has converted a totally charitable and somewhat dilapidated operation into one that is creating money and new jobs in Durham.

Such developments take time. They also take willingness on our part to arrange instructions somewhat differently than we do for our usual graduates, but we have been pleased with our results. We are not training second-class physicians. We are training physicians in a different way, in a different pattern of time, and we are allowing them to begin to create income from practice at a much earlier date than their counterparts do in a different social setting, and we are taking somewhat longer in certain phases of that training.

We are not training scientists, but we are attempting to train doctors who will relate to a community that never before has had medical services. We are beginning to get physicians to cover an area of our population with good medical care, which they have received before.

In attempting to improve the ability of a doctor to give more services, we have begun to look at the question of how he should be supplied with assistants. We have attempted to separate the things the physician does that require judgment from those that require some intelligence and some skill and that are recycled every day. And, as you analyze the activities of the physician in this way, it becomes obvious that many things that have been done traditionally by doctors can be done by nondoctors. We are also confronted with the fact that, at this time in history, specialization is with us, and that it is now very difficult for the hospital to produce personnel trained to fit the many needs of the various kinds and aspects of medical practice. It seemed to us that the physician had to define what his needs were, had to find the population that could serve those needs, and had to train persons selected from it to act as helpers.

So, beginning on an informal basis three or four years ago, and on a rather formal basis two years ago, we have begun to train a group of persons whom we have elected to call physician's assistants, and that is exactly what they are. These are persons recruited by the doctors; they are trained by the doctor; and in the end we intend them to be paid by the doctor.

Of course, we have had the problems that one would expect to find in any new field. We have had the question from nurses as to whether we were stealing things that belonged to them. We have had questions from our own interns, from our resident staff, and from our senior professional staff. Were we going to get in trouble by having people do things done traditionally by physicians? Would the assistants eventually set up as doctors? We have had trouble from hospital administrators who would like to remain in complete command—from the nursing service up to the hospital superintendent. Administrators have wanted the duties and the financial rewards of this particular group of persons to be determined by hospital management rather than by doctors. We have had trouble with government officials in looking for support because they have said that, in order to work in the field of health at any advanced level, a college degree is necessary. Having been to college myself, I have always been a little skeptical about this requirement. More than a college education, one needs dedication to the field of health and a willingness to give service, some understanding of why sick persons are irrational, and why patients make demands that well people do not make.

Each year the physician's assistant can learn things he did not know the year before. The assistant must feel that he has made a lifetime commitment. He does not work a few years and stop, then another few years and stop; he says, "This is my business," and he works at it year in and year out. In the men we have selected for training, the turn of the social wheel has been such that they have gone only through high school and are not financially in a position to go to college. I do not think anything would be gained by sending these men to college for four years when they have shown that they want to be in the health field and are ready to go to work. So we have been in the awkward position of being willing to take high school graduates. The supporting agencies would not object to this if we were to give them a very short course. But we are giving them a two-year course that does have in it

considerable individualization and is relatively expensive per man. There is plenty of money available to give short courses to high school graduates and long courses to college graduates, but we have had trouble in obtaining funds for a two-year course for high school graduates.

This is an extraordinarily complex nation. North Carolina is very unlike New York City. It is very unlike Montana. I do not think for a minute that the pattern we are setting up of turning high school graduates into physician's assistants is a pattern recommended for the entire country. I should like to see someone start this program at the college level in order to find out what characteristics persons would have who remained longer in the field of health and what various capabilities they would develop. Since an old system is ending, we all ought to be testing new programs that are feasible in our own respective areas.

I have talked about men, and now I shall say a few things about machines. As you know, this is a computerized era, and new ways to handle data are being brought to the field of health.

IBM, the International Business Machines Corp., is developing a "clinical decision system," and many of us believe that data collected by physicians' assistants can be fed into the computer before the patient sees the physician. Many of these data can be put together and synthesized by computers.

As this type of machinery comes into being, one must continually reexamine the role of various persons who are collecting the data and putting them into the machine. My guess would be that a great deal of material that is usually collected by the physician can be collected by the nonphysician and that this can be synthesized in the computer to the point at which the computer can begin to ask questions relevant to the patient's particular problem. It is at this point that the teaching of medicine becomes easy. So we have this problem of computer, manpower interface, and what will the machine be like? What will the men be like?

This last question is the easiest one to answer. The physician's assistant may want to become a doctor. If he does, he should be required to take the general education and the basic science courses required of the physician. His work as a physician's assistant could count toward the clinical training required of doctors. The amount of credit he could obtain would be determined by an appropriate examination. In practice, a physician's assistant with a family and a high school education will

rarely become a physician. If one trained college graduates as assistants, a larger number would become doctors.

The question of what a physician's assistant should do is one we have not tried to determine. It is perfectly clear that the economics of the situation require that he must do some of the things a doctor has done traditionally. He cannot be used for convenience, just to make life a little easier for the doctor. He has to do things the doctor did and to be paid for them; the doctor must then do other things, or there is no worth in this system.

The point we come to immediately is that the physician must be trained along with the physician's assistant; otherwise, he really does not know how to use him and what to do with him. Our general plan was for him to have a year of didactic work supervised by the persons with whom he will work. We did not want to farm out biochemistry to the biochemist. We wanted the physician to teach that part of biochemistry that is relevant to current medical practice. A physician's assistant has no trouble in determining *p*H and, statistically, he can move hydrogen ions about the body as well as a doctor three years out of medical school can, because those ions quit moving so easily. We have wished the assistant to have some general knowledge of pharmacology but we have not wanted him taught by the pharmacologist. He is taught by physicians who are interested in therapy and the use of drugs, who determine the content of pharmacology. All our doctors have not liked this because they must take the time to do the teaching. It is always easier if somebody else will do the teaching, but this training would have a different quality. The subjects covered in the first year are the same as those covered in medical school. They are given from a different viewpoint. The second year, we put the assistant in those areas of the hospital that have a high doctor-patient ratio. These include the emergency clinic, the admission room at the Veterans Administration Hospital, the recovery room, the respiratory care unit, the endocrine clinic, the cardiac care unit, and group and individual practices in the state prison hospitals of North Carolina.

We hope to give our assistant an open-ended certificate and, indeed, this is what we are doing at the present time. The certificate states what we have taught him and what in our opinion he was able to do under the supervision of a doctor. Our terms of contract would be that whenever his doctor or doctors wanted him to do something that would

be of benefit to the area in which he works, and for which he needs more training, we would train him. We should then amend his certificate and state that now he is competent to do these additional procedures under the supervision of a doctor.

Medical care is a continuum. What one does depends on how much effort one wants to spend in learning. A nurse does nothing different from a doctor; a professional nurse does everything a nonprofessional does but has additional duties. A man who devotes four years to training will do somewhat less than a man who devotes six years to training. But there is no magic in the system. It depends on the time commitment one wants to make, the time one wants to put in before one actually is administering health care on a service basis.

So, all these things can be taught. One progressively can be responsible for a larger area. We don't have a good system of vertical movement in the health field. I am certainly not in a position to throw stones at anybody. The medical profession is as rigid as any other part of this system. A physician's assistant should be able to do anything that continuously recycles.

As a group, Duke student nurses come from families having a higher income than the families of our medical students. They clearly are pretty, they make good college records. They nurse a few hours a week during a portion of their time at nursing school. And they are excellent mothers and good members of the community. They receive an excellent general education. I have supported colleges all my life. I certainly shall continue to support any position our university takes on giving good general education, even if it relates to the field of health only peripherally.

Most nurses, when they do work, work at jobs—as my wife works at a job—one that she can do and still take excellent care of me. Most of the nurses elect to work in areas such as the airport, where they are not heavily involved in the type of care needed in a busy hospital. I have no objection to this. I repeat that much work in the field of health cannot be covered by this group.

The reason hospital-centered nurses cannot learn is that there are not enough of them. They cannot be released from their pressing duties for new ventures. They cannot share in the continual learning process of the physician because of lack of time. The availability of time and learning are always related. If we were to have the number of interns

drop below a certain level, all the learning would disappear. It takes time, irrespective of the service aspect, to master new material. And nurses simply do not have time to put aside for learning purposes.

Every profession can learn from this experience—that one cannot get too far behind in manpower in the jobs to be covered without getting into a situation in which one has extraordinarily little flexibility. I do not mean that an individual nurse, given the time to learn, is not able to learn. I mean that the system as it now operates—at least in our part of the world—in which the number of persons at work has become too low to perform the necessary tasks—in such a system there is no time to learn what one might like to do next year or the year after that.